Claim Listing

1. (Currently Amended) A compound of the formula:

$$(R^1)_n$$
 R^5
 R^4
 R^3
 R^2

or a pharmaceutically acceptable salt,

wherein:

n is from 0 to 3;

X is -CRaRb- wherein Ra and Rb each independently are hydrogen or

alkyl;

---- is an optional bond;

Y is $-SO_2-$;

each R^1 independently is halo, alkyl, haloalkyl, hydroxy, nitro, alkoxy, cyano, $-S(O)_q-R^e$, $-NR^cR^f$, or $-C(=O)-NR^cR^f$, wherein q is from 0 to 2 and R^e and R^f each independently are hydrogen or alkyl;

R² is phenyl or naphthyl optionally substituted with halo, alkoxy,

haloalkyl, alkyl, alkylsulfonyl, or -C(O)-NH2 or -NH-C(O) NH2;

R³ and R⁴ each independently are hydrogen or alkyl; and

 R_i^5 is at the 5- or 6- position of the isoquinoline ring system and is of the

formula:

$$(R^9R^8C)_2$$
 Z
 $(CR^6R^7)_6$

wherein:

Z is -N-;

r is 2; and

R⁶, R⁷, R⁸, R⁹ and R¹⁰ each independently are hydrogen or alkyl.

- 2. (Original) The compound of claim 1, wherein R⁵ is located at the 5-position of the isoquinoline ring system.
 - 3. (Canceled)
 - 4. (Canceled)
 - 5. (Canceled
- 6. (Previously presented) The compound of claim 1, wherein R^a and R^b are hydrogen.
 - 7. (Canceled)
- 8. (Previously presented) The compound of claim 1, wherein R² is optionally substituted phenyl.
- 9. (Previously presented) The compound of claim 1, wherein R² is optionally substituted naphthalenyl.
- 10. (Previously presented) The compound of claim 8, wherein R² is selected from the group consisting of phenyl, 2-halophenyl, 3-halophenyl, 4-halophenyl, 2,3-dihalophenyl, 2,4-dihalophenyl, 3,4-dihalophenyl, 2,5-dihalophenyl, 3,5-dihalophenyl, 2,3-dihalophenyl, 2-haloalkylphenyl, 3-haloalkylphenyl, 4-haloalkylphenyl, 2,5-dihaloalkylphenyl, 3,5-dihaloalkylphenyl, 2,5-dihaloalkylphenyl, 3,5-dihaloalkylphenyl, 2,6-dihaloalkylphenyl, 2-alkoxyphenyl, 3-alkoxyphenyl, 4-alkoxyphenyl, 2,3-dialkoxyphenyl, 2,4-dialkoxyphenyl, 3,4-dialkoxyphenyl, 3,5-dialkoxyphenyl, 2,5-dialkoxyphenyl, 2,6-dialkoxyphenyl, 2-alkylphenyl, 3-alkylphenyl,

4-alkylphenyl, 2,3-dialkylphenyl, 2,4-dialkylphenyl, 3,4-dialkylphenyl, 3,5-dialkylphenyl, 2,5-dialkylphenyl, and 2,6-dialkylphenyl.

11. (Original) The compound of claim 9, wherein R² is naphthalene-1-yl or napthalene-2-yl.

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- 12. (Previously presented) The compound of claim 1, wherein n is 0.
- 13. (Previously presented) The compound of claim 1, wherein R³ and R⁴ are hydrogen.
 - 14. (Canceled)
- 15. (Original) The compound of claim 14, wherein R⁶, R⁷, R⁸, R⁹ and R¹⁰ are hydrogen.
- 16. (Original) The compound of claim 14, wherein R⁶, R⁷, R⁸ and R⁹ are hydrogen and R¹⁰ is alkyl.
 - 17-27. (Canceled)
 - 28. (Canceled)
- 29. (Currently Amended) The compound of claim 1, wherein said compound is of the formula:

and wherein n, R¹, R², R³, R⁴, R⁶, R⁷, R⁸, R⁹, R¹⁰, R^a and R^b are as defined in claim 1.

- 30. (Canceled)
- 31. (Previously Presented) A compound-selected from the group consisting of:
 - 2-benzenesulfonyl-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-benzenesulfonyl-5-(4-methylpiperazin-1-yl)-1,2,3,4-tetrahydroisoquinoline;
 - 2-(4-fluoro-benzenesulfonyl)-5-pipcrazin-1-yl-1,2,3,4-tctrahydroisoquinolinc;
 - 2-(4-methoxy-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(3-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(3,5-dichloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3,5-bis-trifluoromethyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2,5-dimethoxy-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(3-chloro-4-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(2-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(2-chloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(3-chloro-benzenesulfonyl)-5-pipcrazin-1-yl-1,2,3,4-tetrahydroisoguinoline;
 - 2-(3-methyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
 - 2-(2,3-dichloro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;

2-(2-chloro-4-fluoro-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;

- 2-(2,5-dichloro-benzenesulfonyl)-5-pipcrazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(naphthalene-1-sulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(naphthalene-2-sulfonyl)-5-piperazin-1-yl-1,2,3,4-tetrahydroisoquinoline;
- 2-(2-Methanesulfonyl-benzenesulfonyl)-5-piperazin-1-yl-1,2,3,4-tctrahydro-isoquinoline;
 - 3-(5-Piperazin-1-yl-3,4-dihydro-1H-isoquinoline-2-sulfonyl)-benzamide; and [2-(5-Piperazin-1-yl-3,4-dihydro-1H-isoquinoline-2-sulfonyl)-phenyl]-urea.
- 32. (Original) A pharmaccutical composition comprising an effective amount of at least one compound of claim 1 in admixture with a pharmaceutically acceptable carrier.
- 33. (Currently Amended) A method for enhancing cognitive memory in an Alzheimer's patient, said method comprising administering to said Alzheimer's patient a therapeutically effective amount of a compound of claim 1.
 - 34. (Canceled)
 - 35. (Canceled)
- 36. (Currently Amended) A method for producing a compound of claim 1, said method comprising:

reacting a compound of the formula:

wherein n, R¹, R^a, R³, R⁴ and R⁵ are as recited in claim 1,

with a sulfonyl halide of the formula: R^2 -S0₂-G wherein G is halo and R^2 is as defined in claim 1;

to yield a compound of formula I wherein Y is -SO₂-.

37. (New) A compound of the formula:

or a pharmaceutically acceptable salt, wherein:

n is from 0 to 3;

X is -CRaRb- wherein Ra and Rb each independently are hydrogen or alkyl;

---- is an optional bond;

Y is $-SO_2$ -:

each R^1 independently is halo, alkyl, haloalkyl, hydroxy, nitro, alkoxy, cyano, $-S(O)_q-R^e$, $-NR^eR^f$, or $-C(=O)-NR^eR^f$, wherein q is from 0 to 2 and R^e and R^f cach independently are hydrogen or alkyl;

R² is phenyl, 2-fluorophenyl, 3-fluorophenyl, 4-fluorophenyl, 2-chlorophenyl, 3-chlorophenyl, 3-methylphenyl, 4-methoxyphenyl, 2-methanesulfonylphenyl, 4-amidophenyl, 4-ureaphenyl, 3,5-dichlorophenyl, 2,3-dichlorophenyl, 2,5-dichlorophenyl, 3,5-di(trifluoromethyl)phenyl, 2,5-dimethoxyphenyl, 3-chloro-4-fluorophenyl, 2-chloro-4-fluorophenyl, naphthalen-1-yl, naphthalen-2-yl, or quinolin-8-yl

R³ and R⁴ each independently are hydrogen or alkyl; and
R⁵ is at the 5- or 6- position of the isoquinoline ring system and is of the formula:

$$(R^9R^8C)_2$$
 $(CR^6R^7)_r$

wherein:

Z is -N-;

r is 2; and

 R^6 , R^7 , R^8 , R^9 and R^{10} each independently are hydrogen or alkyl.